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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,715	08/25/2006	Kazuhisa Yamamoto	2006_1416A	2569

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EXAMINER	
HOWARD, RYAN D	

ART UNIT	PAPER NUMBER
2851	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,715	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	RYAN HOWARD	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/30/2008, 04/13/2007, 10/30/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgement: PCT X reference. Kiyoaki (JP 2002-328428 A)

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites a camera shake detection unit/correcting unit without any reference to a camera. The field of the invention is hand held projection, and camera shake is taken to mean a particular kind of shaking wherein the projection device is held in the hands, and the projection device is subjected to subtle shaking/jiggling as the hand moves (page 5 lines 18-25).

Therefore, claim 1 is held to be indefinite as well as claims depending therefrom.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kiyoaki (JP 2002/328428 A).

Regarding claim 1, Kiyoaki teaches an image projection system having a camera device (115, figure 1) including a camera shake detection unit that detects an amount of camera shake of the video projector (paragraph 0033); and a camera shake correction unit (101, 103, figure 1) that corrects the camera shake according to the detected amount of camera shake (paragraph 0034).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2, 3, and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki (JP 2002/328428 A) in view of Shimada et al. (US 6,670,603 B2).

Regarding claim 2, Kiyoaki does not teach, short-wavelength laser light sources which emit laser light of at least three colors of red, blue and green; and Kiyoaki does not specify that the camera shake correction unit performs correction of the camera shake so that the projecting positions of the laser lights of the three colors of red, blue and green are not deviated when the video is projected.

Kiyoaki does teach that the scanning mirror is driven is response to changes in the position of the projector such that the image produced is the ideal image (paragraph

0032, lines 12-18). A person of ordinary skill in the art would recognize that this feature implies the scanning mirror is being driven to maintain the position of the projected image such that the image is stationary on the surface. A stationary image is equivalent to "the projecting positions of the laser lights...is not deviated when the video is projected." It would have been obvious to a person having ordinary skill in the art at the time the invention was made to maintain the projection position of the lasers in order to prevent the user from becoming disoriented by a constantly shifting and distorting image.

Shimada teaches short-wavelength laser light sources (11-13, figure 3) which emit laser lights of at least three colors of red, blue and green (column 5 lines 5-11). Short wavelength is taken to indicate light having a wavelength less than or equal to that of red light.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include the three laser sources of Shimada because the three laser sources of Shimada provide a high spectral purity, increasing the color gamut, thereby giving the user a more full color image.

Regarding claim 3, Kiyoaki teaches a video image is formed by scanning laser light on a projection region (figure 3).

Kiyoaki does not teach three colors of laser light.

Shimada teaches short-wavelength laser light sources (11-13, figure 3) which emit laser lights of at least three colors of red, blue and green.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include the three laser sources of Shimada because the three laser sources of Shimada provide a high spectral purity, increasing the color gamut, thereby giving the user a more full color image.

Regarding claim 5, Kiyoaki teaches a camera device (paragraph 0030), and the projection position of the laser light being detected by the camera device when the laser light from the short wavelength laser light source (109) is projected (paragraph 0030). Short wavelength is taken to mean light with a wavelength shorter than or equal to red light. Since the projector is at least a single color projector (paragraph 0024), this laser is has a wavelength less than or equal to red.

Regarding claim 6, Kiyoaki does not specify a projection optical system which projects video takes the focus of the projected video by an auto-focusing function.

Shimada teaches a projection optical system which projects video takes the focus of the projected video by an auto-focusing function (column 4 lines 40-45).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include the focus correction of Shimada because the focus correction of Shimada insures that the projected image is always clear.

Regarding claim 7, Kiyoaki teaches the projecting optical system which projects video performs correction of the projected video in a trapezoidal shape when performing the projection of video (figures 6, 7a-b; paragraphs 0028-0029).

Regarding claim 8, Kiyoaki teaches a camera device (paragraph 0030).

Kiyoaki does not teach an infrared laser light being irradiated to a region outside the projection region; the infrared laser light from the region outside the projection region being detected.

Shimada teaches an infrared laser light (column 5 line 50) being irradiated to a region outside the projection region (42, figure 6); the infrared laser light from the region outside the projection region being detected (figure 6).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include the infrared sensor light of Shimada because the infrared sensor light is not visible and therefore does not interfere with the image being projected (column 4 lines 26-29).

Regarding claim 9, Kiyoaki teaches a portion serving as a remarque on the projection region is detected by the camera device when projecting video (paragraph 030). The CCD camera of Kiyoaki senses a projection area, that area is the remarque portion.

8. Claims 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki in view of Pate (US 7,187,343 B2).

Regarding claim 11, Kiyoaki teaches a projection optical system which includes a short-wavelength laser light source (109, figure 1) and projects laser light which is emitted from the short-wavelength laser light source (paragraph 0024); and a camera device (paragraph 0030).

Kiyoaki does not specify that the external light captured by the camera device is captured through the projection optical system.

Pate teaches capturing external light through the projection optical system (64, figure 3).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include a common optical system for the projecting and detected light as taught by Pate, because the common optical system for projection light and detected light simplifies the projector, by allowing the sensing and projecting areas to overlap (column 6 lines 25-30).

Regarding claim 13, Kiyoaki teaches the projection optical system performs correction of the projected video in a trapezoid shape when performing the projection of video (figures 6, 7a-b; paragraphs 0028-0029).

Regarding claim 14, Kiyoaki does not teach the projecting optical system has a prism having polarization, which is disposed on the optical axis of the optical system.

Pate teaches the projecting optical system has a prism having polarization, which is disposed on the optical axis of the optical system (66, figure 3). The beam splitter works by selectively transmitting light of one polarization while reflecting light of an orthogonal polarization.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include a common optical system for the projecting and detected light as taught by Pate, because the

common optical system for projection light and detected light simplifies the projector, by allowing the sensing and projecting areas to overlap (column 6 lines 25-30).

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki in view of Shimada as applied to claim 2 above, and further in view of Sonoda et al. (US 2001/0050932 A1).

Regarding claim 4, Kiyoaki in view of Shimada teaches an infrared light source emitting measuring light (Shimada: 10, figure 3); however, this feature is not being relied on for this claim.

Kiyoaki in view of Shimada does not teach an infrared semiconductor laser which emits infrared laser light; and a wavelength conversion element which makes the infrared laser light emitted from the infrared semiconductor laser subjected to wavelength conversion to output the converted laser light, and a part of the light which is not subjected to wavelength conversion, among the infrared laser light that is emitted from the infrared semiconductor laser being outputted to the external space.

Sonoda teaches an infrared laser which emits infrared laser light (10, figure 14); and a wavelength conversion element which makes the infrared laser light emitted from the infrared semiconductor laser subjected to wavelength conversion to output the converted laser light (30, figure 14), and a part of the light which is not subjected to wavelength conversion, among the infrared laser light that is emitted from the infrared semiconductor laser being outputted to the external space (paragraph 0118).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki in view of Shimada to include the semiconductor laser source of Sonoda because the semiconductor laser source and wavelength converter of Sonoda reduces noise thereby producing a higher quality image (paragraph 0016).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki in view of Shimada as applied to claim 2 above, and further in view of Pate.

Regarding claim 10, Kiyoaki in view of Shimada does not teach the projection optical system which projects video has a prism having polarization, which is disposed on the optical axis of the projection optical system.

Pate teaches the projecting optical system has a prism having polarization, which is disposed on the optical axis of the optical system (66, figure 3). The beam splitter works by selectively transmitting light of one polarization while reflecting light of an orthogonal polarization.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki in view of Shimada to include a common optical system for the projecting and detected light as taught by Pate, because the common optical system for projection light and detected light simplifies the projector, by allowing the sensing and projecting areas to overlap (column 6 lines 25-30).

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki in view of Pate as applied to claim 11 above, and further in view of Shimada.

Regarding claim 12, Kiyoaki in view of Pate does not teach the projection optical system takes the focus of the projected video by an auto-focusing function.

Shimada teaches a projection optical system which projects video takes the focus of the projected video by an auto-focusing function (column 4 lines 40-45).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki to include the focus correction of Shimada because the focus correction of Shimada insures that the projected image is always clear.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoaki in view of Pate as applied to claim 11 above, and further in view of Sonoda.

Regarding claim 15, Kiyoaki in view of Pate does not teach an infrared semiconductor laser which emits infrared laser light; and a wavelength conversion element which makes the infrared laser light emitted from the infrared semiconductor laser subjected to wavelength conversion to output the converted laser light, and a part of the light which is not subjected to wavelength conversion, among the infrared laser light that is emitted from the infrared semiconductor laser being outputted to the external space.

Sonoda teaches an infrared laser which emits infrared laser light (10, figure 14); and a wavelength conversion element which makes the infrared laser light emitted from

the infrared semiconductor laser subjected to wavelength conversion to output the converted laser light (30, figure 14), and a part of the light which is not subjected to wavelength conversion, among the infrared laser light that is emitted from the infrared semiconductor laser being outputted to the external space (paragraph 0118).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the scanning system of Kiyoaki in view of Pate to include the semiconductor laser source of Sonoda because the semiconductor laser source and wavelength converter of Sonoda reduces noise thereby producing a higher quality image (paragraph 0016).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mochizuki et al. (US 6,846,081 B2) teaches a camera device accompanying a projection device. Tanaka et al. (US 6,330,398 B1) teaches a camera with an accelerometer for detecting minute perturbations of the camera. Tamura et al. (US 6,877,864 B1) teaches a projector with an inclination detector. Yokote et al. (US 2005/0099607 A1) teaches a hand-held projector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN HOWARD whose telephone number is (571)270-5358. The examiner can normally be reached on Monday-Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RYAN HOWARD/
Examiner, Art Unit 2851
02/24/2009

/Diane I Lee/
Supervisory Patent Examiner, Art Unit 2851